

Listing of the Claims

1. (Previously Presented) A label printer system for a disk storage medium including a thermally-sensitive layer and embedded disk information with pre-recorded data formed on at least a portion of a surface of said disk storage medium, the label printer system comprising;

a rotational drive for rotating said disk storage medium;

a transverse drive including a laser head for moving a laser substantially transversely with respect to said disk storage medium;

a memory including a symbol set and a label printer driver; and

a processor communicating with said memory, said rotational drive, said transverse drive, and said laser, and wherein said processor uses said label printer driver to control said rotational drive and said transverse drive in order to thermally write said symbol set to said thermally-sensitive layer of said disk storage medium using said laser at a laser power read from the pre-recorded data with the laser.

2. (Original) The system of claim 1, wherein said memory further includes a rotational position variable that tracks a rotational position of said disk storage medium.

3. (Original) The system of claim 1, wherein said memory further includes a transverse position variable that tracks a transverse position of said laser head.

4. (Original) The system of claim 1, wherein said memory further includes a disk orientation variable that tracks an orientation of said disk storage medium.

5. (Original) The system of claim 1, wherein said laser head comprises a read laser and a writing laser positioned below said disk storage medium, with said writing laser being used to thermally write to said thermally-sensitive layer.

6. (Previously Presented) The system of claim 1, wherein said laser head comprises a read laser and a writing laser positioned above said disk storage medium and further comprises an additional read laser positioned below said disk storage medium, with said writing laser being used to thermally write to said thermally-sensitive layer.

7. (Previously Presented) A label printing method for a disk storage medium having embedded information with pre-recorded data, comprising the steps of:

loading a symbol set to a processor controlling a disk drive, with said symbol set including one or more predetermined symbols or graphics to be written to said disk storage medium;

reading the pre-recorded data from the disk storage medium;

heating with a laser, using the pre-recorded data to control power to the laser, a thermally-sensitive layer formed on at least a portion of an upper surface of said disk storage medium; and

manipulating said laser with respect to said disk storage medium;

wherein said symbol set is used to controls the manipulating step in order to write said one or more predetermined symbols or graphics to said thermally-sensitive layer.

8. (Original) The method of claim 7, wherein said disk drive includes a read laser and a writing laser positioned below said disk storage medium, and further comprising the preliminary step of detecting an orientation of said disk storage medium, and wherein the heating step is performed by said writing laser and the loading, heating, and manipulating steps are performed if said disk storage medium is inverted.

9. (Original) The method of claim 7, wherein said disk drive includes a read laser and a writing laser positioned below said disk storage medium and a label printer writing device positioned above said disk storage medium, and wherein the heating step is performed by said label printer writing device.

10. (Original) The method of claim 7, further comprising the steps of:
rotating said disk storage medium;
transversely moving said laser with respect to said disk storage medium;
tracking a rotational position of said disk storage medium in a rotational

5 position variable; and

tracking a transverse position of said laser in a transverse position variable;
wherein said rotational position and said transverse position are used by
said processor for manipulating said laser with respect to said disk storage
medium.

10 11. (Original) The method of claim 7, further comprising the step of reading
one or more alignment marks on said disk storage medium.

12. (Previously Presented) A label printing method for a disk storage
15 medium, comprising the steps of:

loading a symbol set to a processor controlling a disk drive, with said
symbol set including one or more predetermined symbols or graphics to be written
to said disk storage medium;

20 reading one or more types of embedded information of pre-recorded data
on said disk storage medium;

heating with a laser a thermally-sensitive layer formed on at least a portion
of an upper surface of said disk storage medium; and

manipulating said laser with respect to said disk storage medium;

25 wherein said symbol set in conjunction with said one or more types of
embedded information of pre-recorded data is used to control the manipulating
step in order to write said one or more predetermined symbols or graphics to said
thermally-sensitive layer.

30 13. (Previously Presented) The method of claim 12, wherein said one or
more types of embedded information of pre-recorded data are used to determine
the location of one or more alignment marks which are used to align a completed
label according to a predetermined orientation.

14. (Previously Presented) The method of claim 13, wherein said one or more alignment marks are pre-printed on said thermally-sensitive layer.

15. (Previously Presented) The method of claim 13, wherein said one or more alignment marks were previously written to a data contents of said disk storage medium.

16. (Previously Presented) The method of claim 13, further comprising the preliminary step of printing said one or more alignment marks to said thermally-sensitive layer before the loading step.

17. (Previously Presented) The method of claim 13, further comprising the step of ejecting said disk storage medium according to a predetermined orientation using said one or more alignment marks.

18. (Previously Presented) The method of claim 13, further comprising the step of ejecting said disk storage medium according to a predetermined orientation using digital data stored on said disk storage medium.

19. (Original) The method of claim 12, wherein said laser comprises a writing laser positioned below said disk storage medium, and further comprising the preliminary step of detecting an orientation of said disk storage medium, and wherein the heating step is performed by said writing laser and the loading, heating, and manipulating steps are performed if said disk storage medium is inverted.

20. (Original) The method of claim 12, wherein said laser comprises a label printer writing device positioned above said disk storage medium, and wherein the heating step is performed by said label printer writing device.

21. (Original) The method of claim 12, further comprising the steps of:
rotating said disk storage medium;
transversely moving said laser with respect to said disk storage medium;
tracking a rotational position of said disk storage medium in a rotational

5 position variable; and

tracking a transverse position of said laser in a transverse position variable;
wherein said rotational position and said transverse position are used by
said processor for manipulating said laser with respect to said disk storage
medium.

10 22. (Previously Presented) A label printing method for a disk storage
medium having embedded information with pre-recorded data, comprising the
steps of:

loading a symbol set to a processor controlling a disk drive, with said
15 symbol set including one or more predetermined symbols or graphics to be written
to said disk storage medium;

reading one or more alignment marks on said disk storage medium;

heating with a laser a thermally-sensitive layer formed on at least a portion
of an upper surface of said disk storage medium at a laser power read from the
20 pre-recorded data with the laser; and

manipulating said laser with respect to said disk storage medium;

wherein said symbol set in conjunction with said one or more alignment
marks used to control the manipulating step in order to write said one or more
predetermined symbols or graphics to said thermally-sensitive layer; and

25 wherein said one or more alignment marks were previously written to a
data contents of said disk storage medium.

23. (Previously Presented) A label printing method for a disk storage medium having embedded information with pre-recorded data, comprising the steps of:

loading a symbol set to a processor controlling a disk drive, with said
5 symbol set including one or more predetermined symbols or graphics to be written to said disk storage medium;

reading one or more alignment marks on said disk storage medium;

heating with a laser a thermally-sensitive layer formed on at least a portion
of an upper surface of said disk storage medium at a laser power read from the
10 pre-recorded data with the laser; and

manipulating said laser with respect to said disk storage medium;

wherein said symbol set in conjunction with said one or more alignment
marks used to control the manipulating step in order to write said one or more
predetermined symbols or graphics to said thermally-sensitive layer; and

15 ejecting said disk storage medium according to a predetermined orientation using digital data stored on said disk storage medium.

24. (Previously Presented) A labeling apparatus for disk storage medium having a thermally sensitive layer, one or more alignment marks, and embedded disk
20 information with pre-recorded data, comprising:

means for reading the pre-recorded data from the disk storage medium;

means for heating on the thermally sensitive layer in conjunction with the
pre-recorded data; and

means for manipulating said means for heating with respect to said disk
25 storage medium in order to write on or more predetermined symbols or graphics to said thermally-sensitive layer in conjunction with the one or more alignment marks.

25. (Previously Presented) The labeling apparatus of claim 24, further
30 comprising:

means for indicating that the disk storage medium is oriented in the labeling apparatus in an upright or inverted position.

26. (Previously Presented) The labeling apparatus of claim 24 wherein said means for heating is a laser.

27. (Previously Presented) The labeling apparatus of claim 24 wherein said
5 means for heating is a thermal writing head.

28. (Previously Presented) The labeling apparatus of claim 24, further comprising:

means for detecting existing symbols or graphics; and

10 means for detecting an empty area on the thermally sensitive layer.

29. (Previously Presented) The labeling apparatus of claim 28, further comprising:
means for allowing a user to view the existing symbols or graphics; and
means for allowing the user to modify the existing symbols or graphics.

30. (Previously Presented) The labeling apparatus of claim 24, wherein said
15 means for manipulating includes means for forming a label composed of different colors disposed in a pattern within the thermally sensitive layer.

31. (Previously Presented) The labeling apparatus of claim 29, further comprising
20 means for test printing on the thermally sensitive layer to provide precise position information of the pattern of different colors.

32. (Previously Presented) The labeling apparatus of claim 24, further comprising
25 means for storing a label data file within the thermally sensitive layer.

33. (Previously Presented) The labeling apparatus of claim 24, further comprising
means for ejecting the disk storage medium according to a predetermined
orientation based on the one or more alignment marks.